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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,202	04/09/2001	Jia-Hong Shieh	ACR0025-US	3672

28970 7590 11/03/2004

SHAW PITTMAN  
IP GROUP  
1650 TYSONS BOULEVARD  
SUITE 1300  
MCLEAN, VA 22102

EXAMINER
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ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,202

Applicant(s)

SHIEH, JIA-HORNG

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-20 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Response to the applicant's amendments**

\*\*\*\*\* The examiner accepts amended claims 1, 5, 7 and 11.

\*\*\*\*\* The corrected or substituted specification was received on 07/12/04. The specification is accepted.

**Response to the applicant's argument**

Applicant's argument with respect to amended claims **1, 5, 7 and 11** filed on 07/12/04 have been fully considered but they are not persuasive.

The applicant argues that both of the said PI syndrome and said PO syndrome are generated before the ECC decoder performs the error correction decoding. However, the applicant's admitted prior art teaches that referring to figure 3, a flow chart of decoding RS code in a conventional ECC decoder and at stage 301, original code words in the data buffer (106) enter the stage of syndrome generation, wherein an ECC decoder (114) calculates the PI syndrome or the PO syndrome (see page 2 lines 49-52 of the disclose). Therefore, the applicants' argument although acknowledged, has not been found to be convincing.

**DETAILED ACTION**

1. Claims **1 to 12** are presented for examination.

Claims 13-20 have been allowed in the previous first non-final action.

***Drawings***

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2. The **drawings** are objected to because figures 1-3 should be designated by a legend such as – **prior art**- in order to clarify what is applicant's invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims **1-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants' admitted prior art (hereinafter admitted prior art) in view of Iwasa (U.S. PN: 6,470,473).

As per claims **1 and 7-9**, the applicant's submitted prior art's figure 1 disclosed a conventional decoding system in a DVD storage system includes, a demodulator (see element 102) reads data and the data stored in the disk (see element 100) whereby the demodulator generates an ECC block (see element 107) and transmits to a data buffer (see element 106) wherein the ECC block comprises main data, PI (parity inner code), PO (parity outer code).

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Further, the applicant's submitted prior art teach that the main data append with PO to form an outer code RS (Reed-Solomon) and the RS append with PO and PI to form an inner code RS (Reed-Solomon), an ECC decoder reads the ECC block from the data buffer to form the error correction decoding along the PI direction and the PO direction of the ECC block, and a de-scrambling and EDC check reads corrected data stored in the data buffer for de-scrambling the main data and checking errors (see the applicants' disclosure page 1, lines 14-29). Furthermore, the applicants' submitted prior art teaches that when a host needs the main data an ATAPI (see element 118) reads the main data in the data buffer (see the applicants' disclosure page 1, lines 14-29). The applicants' submitted prior art did not **explicitly** teach a syndrome generator for generating PI syndrome and PO syndrome and a memory coupled to the syndrome generator for storing PO syndrome. **However**, Iwasa in an analogous art disclose a DVD data decoding processing system (see figure 3, reference number 30) includes a DVD reproducing unit (see element 32) and a buffer memory (see element 34) whereby the DVD reproducing unit includes a demodulating unit (see element 36) coupled to a PI syndrome generating unit (see element 38), an error correcting unit (see element 40), a PI syndrome storing memory (see element 48), a buffer memory (see element 42) having a memory capacity corresponding to a few lines, a PO syndrome generating unit (see element 44), a de-scrambling/EDC calculating part (see element 46), a PO syndrome storing memory (see element 50), an EDC calculation result storing memory (see element 52) and an error correcting part (see element 54), which are coupled as shown.

**Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to combine (incorporate) the teachings of the applicant's prior art with the PI/PO syndrome generators including the memory (PO syndrome storing memory) for

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storing and calculating PO syndromes. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively high reliable in operation that results facilitating utilization of flexible and efficient memory configurations.

As per claims **2 and 3**, the admitted prior art in view of Iwasa teach all the subject matter claimed including Iwasa in figure 3 teach an ECC decoder or ECC unit (see fig. 3, element 40) connected to PI syndrome storing memory (see element 48) and PO syndrome storing memory (see element 50) to store PI and PO syndromes.

As per claims **4 and 10**, the admitted prior art in view of Iwasa teach all the subject matter claimed including a demodulator (see fig. 3, element 36) receives data read out from a disk (see element 14) to demodulate the received data and to develop the modulated data (convert codes to symbols) in the buffer memory (see col. 1, lines 44-53).

As per claims **5 and 11**, the applicant's submitted prior art's figure 1 disclosed a conventional decoding system in a DVD storage system, a demodulator (see element 102) reads data and the data are stored in the disk (see element 100) whereby the demodulator generates an ECC block (see element 107) and transmits to a data buffer (see element 106) wherein the ECC block comprises main data, PI (parity inner code), PO (parity outer code). Further, the applicant's submitted prior art teach that the main data append with PO to form an outer code RS (Reed-Solomon) and the RS append with PO and PI to form an inner code RS (Reed-Solomon), an ECC decoder reads the ECC block from the data buffer to form the error correction decoding along the PI direction and the PO direction of the ECC block, and a de-scrambling and EDC check reads corrected data stored in the data buffer for de-scrambling the main data and checking

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errors (see the applicants' disclosure page 1, lines 14-29). Furthermore, the applicant submitted disclosure teaches that when a host needs the main data an ATAPI (see element 118) reads the main data in the data buffer. The applicant's submitted prior art did not **explicitly** teach PI/PO syndrome generators and transmitting PI syndrome to a data room and reading out PO syndrome. **However**, Iwasa in an analogous art disclose a DVD data decoding processing system (see figure 3, reference number 30) includes a DVD reproducing unit (see element 32) and a buffer memory (see element 34) whereby the DVD reproducing unit includes a demodulating unit (see element 36) coupled to a PI syndrome generating unit (see element 38), an error correcting unit (see element 40), a PI syndrome storing memory (see element 48), a buffer memory (see element 42) having a memory capacity corresponding to a few lines, a PO syndrome generating unit (see element 44), a de-scrambling/EDC calculating part (see element 46), a PO syndrome storing memory (see element 50), an EDC calculation result storing memory (see element 52) and an error correcting part (see element 54), which are coupled as shown. **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to combine (incorporate) the teachings of the applicant's prior art with the PI/PO syndrome generators including the memories (PI and PO syndrome storing memory) for storing and calculating PI and PO syndromes. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively high reliable in operation that results facilitating utilization of flexible and efficient memory configurations.

As per claims **6 and 12**, the admitted prior art in view of Iwasa teach all the subject matter claimed including a demodulator (see fig. 3, element 36) receives data read out from a

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disk (see element 14) to demodulate the received data and to develop the modulated data (convert codes to symbols) in the buffer memory (see col. 1 lines 44-53).

***Conclusion***

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

*Esaw Abraham*

Esaw Abraham

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*[Signature]*  
GUY J. LAMARRE  
PRIMARY EXAMINER